



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,130	03/07/2001	Eric W. Bonabeau	ICO-007.01.	5182
20583	7590	04/20/2004	EXAMINER	
JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			IRSHADULLAH, M	
			ART UNIT	PAPER NUMBER
			3623	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,130

Applicant(s)

BONABEAU, ERIC W.

Examiner

M. Irshadullah

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☒ Claim(s) 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to the amendment filed December 17, 2003.

Summary Of Instant Office Action

2. Applicant's arguments regarding claims 1-43 rejection under 35 U.S.C. 103, Paper No. 2, mailed July 18, 2003 have been fully considered and a new Office Action is set out below.

3. Pursuant Applicant's request claims 41-43 have been cancelled.

4. Amendments to claims 1, 2, 4, 9, 11, 13-15, 17-18, 24-30 and 34-40 have been entered.

- 4a. Amendments to priority and specification as per Examiner's suggestion are appreciated and have been entered.

- 4b. Submitted Form 1449 only provides Patent documents, however, Applicant is requested to submitted all other non-patent material as mentioned in para 2 of the above mentioned prior Office Action.

Claim Objections

4c. Claim 35 is objected to because of the following informalities:

a) In element e), amend (d) to (c) in "repeat (c)" and amend (e) to (d) in "iteration of (e)".

Appropriate correction is appreciably required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keane (US Patent 5,737,581) in view of Shinagawa et al (US Patent 5,897,629).

Keane teaches:

Claim 1. A method for generating business models for solving a selected business problem, the method comprising:

a) describing a plurality of computer-simulatable business models (Col. 7, lines 6-8 and Fig. 1 {104, 105, 106, 108 and 109} wherein 104, 105 etc. are business models which the reference system simulator uses {computer-simulatable}, col. 3, lines 25-30), wherein a business model describes operations of businesses for solving the business problem (Fig. 4 {400}, described col. 7, line 6 through col. 8, line 25 and col. 2, lines 52-

55, wherein cited col. 7, lines 6-21 describe operation of business(es) relating to “making decision (solving) regarding the quality assurance measures (the business problem) as recited in col. 2, lines 52-55”), and wherein a business model has an associated operational performance model (Fig. 1 {105} and col. 2, lines 54-55, wherein cited “to see the impact of these decisions on business performance” inferring the provision of relative (associated) model for business’s performance or operational performance thereof),

b) describing a business-model environment, wherein the business-model environment comprises a plurality of computer-simulateable customer models, wherein the customer models patronize the business models to receive values from the business models (Col. 6, line 51, Fig. 8, described col. 14, line 52 through col. 15, line 15, wherein cited description of “consumer model” infers claimed “business model environment as per applicant’s specification, page 13, lines 18-19 read with lines 30-31). Moreover, cited consumer model as being part of simulation system 100, is simulated (computer-simulateable), and citation of “those who received (bought) defective products and return” points to consumer’s (customer’s) buying (patronizing to receive values or quality-applicant’s spec. page 3, lines 30-32) from model or business model),

c) determining the operational performances of the businesses described by the plurality of business models (Col. 4, lines 34-36 and Figs. 2 and 4, wherein execution (or implementation) of steps of the Figs. infer operations for determining performance of business(es) in accordance with above discussed number (plurality) of business

models) by simulating (i) the plurality of business models (Fig. 1 {100 and 104, 105, 106, 108, 109}, described col. 2, lines 61-67 and col. 3, lines 25-30), and (ii) the business model environment, including simulating the customer models receiving values from the business models (Fig. 1 {100 and 107} and discussion about "environment" and "receiving values" above), and

In the following element d):

d) generating a next plurality of business models from the simulated plurality of business models by performing an evolutionary method including:

- (i) determining business-model fitness in dependence on the operational business-model performances,
- (ii) selecting one or more business models in dependence on their fitness, and
- (iii) transforming the selected business models into new business models by applying one or more genetic operators, wherein the new business models incorporate elements of the selected business models.

Keane teaches:

simulating plurality of business models (Fig. 1 {100 and 104, 105, 106, 108, 109}).

Keane does not teach:

generating a next plurality of business models by performing an evolutionary method and (i)-(iii).

However, Shinagawa et al teach the same:

generating a next plurality of business models by performing an evolutionary method (Col. 5, line 66 through col. 6, line 54, wherein delivery planning unit 12 producing or "generating" a set or "plurality" of modified or new or next proposed delivery plans as indicated by col. 6, lines 35-40: modified delivery route serving as new or next route and on finalizing said modified or new or next routes for all carriers, delivery planning unit 12 producing or generating new or next delivery plans which are termed as proposed delivery plans; said delivery plans are models, lines 50-52. Moreover, said delivery models or plans representing "business models", since they relate to the business of delivery of packages, lines 52-54, and cited genetic algorithm, col. 5, lines 66-67, is "evolutionary method" as per col. 4, lines 37-38 of enclosed Patent 6,576,919 B1);

(i) determining business-model fitness in dependence on the operational business-model performances (Col. 6, lines 15-23, wherein "evaluating fitness" of proposed delivery plans or models indicating "determining business model fitness" and said fitness relating to "operational business model performance" as discussed in Applicant's claim 1c) above);

(ii) selecting one or more business models in dependence of on their fitness (Col. 6, lines 15-23, wherein allocation unit 11 "selecting fittest individuals based on their fitness values", and cited individuals pointing to delivery plans or models or "business models", col. 2, lines 22-23: individuals being candidate solutions, and said solutions are delivery plans, col. 6, lines 21-23: choosing delivery plans or models as the optimal solutions)

(iii) transforming the selected business models into new business models by applying one or more genetic operators (Col. 5, lines line 66 through col. 6, line 3, wherein applying genetic algorithm and its operators crossover, mutation etc. indicating reference's performing "transformation or transforming" above discussed selected delivery plans or models or business models into above discussed next or new delivery plans or business models. In support of genetic algorithm and operators thereof performing transformation, Applicant is referred to US Patent 6,480,832 B2, col. 3, lines 53-65: Genetic algorithms transform populations into new populations, lines 54-55). While Keane provides a simulator for simulating quality of a business's product flow, Shinagawa et al teach a simulating system including genetic algorithm comprising selection, crossover and mutation operators for building a fittest business model for delivery. Both Keane and Shinagawa et al are analogous art in the field of business modeling.

It would have been obvious to one of ordinary skill in the relevant art at the time of instant invention to include Shinagawa et al's features into Keane's invention, because the combination would provide a system enabling a user to efficiently and quickly solve multi-constraint problems as commonly faced by businesses.

Claims 2 and 29. The method of claim 1/28 further comprising repeating one or more times c) and d), wherein each repeat of c) simulates the plurality of business models resulting from the previous iteration of d) (Keane: Fig. 2 {254}, col. 4, lines 34-36 recited with col. 6, lines 39-49, wherein "simulation continues" after the determination

made at step 254, and “user given the opportunity to reconfigure (generate) next (or new) quality model to improve performance” inferring claimed “repeating the steps” for simulating models obtained in the prior (or previous) steps as per user’s choice of steps including c) and d)).

In the following claim:

Claims 3 and 16. The method of claim 1/15 wherein the business models are elements in a space of business models for solving the business problem.

Keane teaches:

solving the business problem (see discussion in applicant’s claim 1a) above).

Keane does not teach:

the business models are elements in a space of business models.

However, Shinagawa et al teach the same (Col. 13, lines 41-51, wherein cited “solution space” indicating reference’s teaching “space” having data items or elements depicted in Fig. 4, and Fig. 4 depicting delivery plan or model or business model, col. 6, lines 50-52). While Keane provides a simulator for simulating quality of a business’s product flow, Shinagawa et al teach a simulating system including genetic algorithm comprising selection, crossover and mutation operators, and the combination would provide a system enabling a user efficiently and quickly solve multi-constraint problems globally or in consideration of entire space.

It would have been obvious to one of ordinary skill in the relevant art at the time of current invention to incorporate Shinagawa et al's feature into Keane's invention for the above stated reason.

Claim 4. The method of claim 1 wherein at least two business models interact, and wherein c) further comprises simulating interactions between business models (Keane: Col. 6, lines 52-55 and col. 1, lines 11-12).

In the following claims:

Claims 5 and 22. The method of claim 1/21 wherein the genetic operators comprise a cross-over operator which transforms at least two parent business models into at least one new business model by combining characteristics of both parent business models into the characteristics of the at least one new business model.

Keane teaches:

business models (as discussed above)

Keane does not teach:

cross-over operator which transforms at least two parent business models into at least one new business model by combining characteristics of both parent business models into the characteristics of the at least one new business model.

However, Shinagawa et al teach the same (Col. 2, line 37-43, wherein cited "crossover operator" is employed to "parent individuals", as discussed above, individuals representing "business models" and cited new individual representing claimed "new model or business model" and "combining" the features (or characteristics) in the

models is a function which crossover operator performs (See enclosed US Patent 5,136,686, col. 11, lines 44-46). While Keane provides a simulator for simulating quality of a business's product flow, Shinagawa et al teach genetic algorithm comprising crossover operator, and the combination would provide a system enabling a user efficiently and quickly solve multi-constraint problems as commonly faced by businesses.

It would have been obvious to one of ordinary skill in the relevant art at the time of instant invention to include Shinagawa et al's features into the Keane's invention for the reason cited above.

Claims 6 and 23. The method of claim 1/21 wherein the genetic operators comprise a mutation operator which transforms a parent business model into a new business model by modifying a characteristic of the parent business model (Shinagawa et al: Col. 5, line 66 through col. 6, line 3. Moreover, "modifying" is the function the mutation operator performs (See US Patent 5,136,686, col. 11, lines 48-49, and see motivation above).

Claim 7. The method of claim 1 wherein the business models comprise parameter data specifying characteristics of the business operations described by the business models (Keane: Fig. 1 {104, 105, etc.} and col. 3, lines 66-67 recited with lines 52-55).

Claims 8 and 31. The method of claim 1/28 wherein business model descriptions comprises one or more computer-simulateable value propositions (VP) which describe output values provided by businesses (Keane: Col. 5, lines 29-42, wherein "goods and services (or type of goods and services) purchased, returning defective products (quality), consumer's dissatisfaction and switching to competitive products (value of goods and services to consumer) etc., which reference system simulates, inferring claimed VP (See Applicant's spec. page 16, lines 13-20)).

Claims 9 and 25. The method of claim 8/15 wherein VPs comprise descriptions of at least one of: the natures of one or more goods or services provided, qualities of the goods or services, customers for goods and services, relations with other business models, and marketing to customers or business models (Keane: Col. 5, lines 29-36, wherein "defective product" inferring claimed "quality of goods and services").

Claims 10 and 32. The method of claim 1/28 wherein business model descriptions comprises one or more computer-simulateable operational approaches (OA) which describe inputs to businesses and transformations of inputs to output values by businesses (Keane: Col. 5, lines 29-30 recited with col. 4, lines 2-10 (See Applicant's spec. page 16, lines 21-28)).

Claims 11 and 26. The method of claim 10/15 wherein the OAs comprise descriptions of at least one of: inputs needed for the goods or services provided, technology employed to produce the goods or services, and capital and labor needed for production (Keane: Col. 4, lines 2-10, wherein "capital, material, labor requirements, etc." inferring claimed description requisite inputs for yielding (producing) products (goods, services etc.)).

Claims 12 and 33. The method of claim 1/28 wherein business model descriptions comprises one or more computer-simulateable revenue mechanisms (RM) which describe pricing and cost models by which businesses acquire revenues (Keane: Fig. 1 {106, 108}, col. 4, lines 11-13, 17-18 and col. 2, line 55 (see Applicant's spec. page 16, line 29 through col. 17, line 4)).

Claims 13 and 27. The method of claim 12/15 wherein the RMs comprise descriptions of at least of: a margin or an amount per transaction, a margin or an amount per unit time, a margin or an amount per unit volume, a transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism, and a membership-fee pricing mechanism (Keane: Col. 4, lines 11-13, 17-18 and col. 2, line 55, wherein "cost, pricing, sales, profit etc." inferring the claimed limitations).

Claim 14. The method of claim 1 wherein business models comprise descriptions of at least one of: one or more inputs to a business, one of more values

Art Unit: 3623

output from a business, one or more transformations of inputs into output values by a business, labor and capital required for a business, and one or more pricing models for a business (Keane: Fig. 1 {104, 105, 106, 108, 109, 107}, col. 3, lines 25-28 read with lines 39-42, col. 4, 2-13, 17-18 and col. 5, lines 29-30, wherein lines 39-42 inferring requisite "inputs" and "goods and services" purchased by consumers point to "outputs from a business").

Claim 15. A method for generating business models for solving a selected business problem 10 comprising:

a) describing a plurality of computer-simulateable building blocks (Keane: Col. 7, lines 6-8 recited with col. 4, lines 2-13 and 17-20, wherein cited "capital, material, labor requirement, product (goods, services) type, costs, pricing etc. are elementary components (building blocks) of business as per applicant's spec. page 12, lines 29-31 and page 16, lines 9-12), moreover, cited elementary components (building blocks) are simulated (col. 3, lines 28-30) for solving the problem "making decision regarding quality assurance measurements to installed (col. 2, lines 52-55), wherein the building blocks comprise one or more business elements of the business problem (as discussed above)), and wherein the building blocks further comprise (i) one or more computer-simulateable value proposition (VP) building blocks which describe output values provided by businesses (See discussion of Applicant's claim 8), (ii) one or more computer-simulateable operational approach (OA) building blocks which describe inputs to businesses and transformations of inputs to output values by businesses (See

discussion of Applicant's claim 10), and (iii) one or more computer-simulateable revenue mechanism (RM) building blocks which describe pricing and cost models by which businesses acquire revenues (See discussion of Applicant's claim 12),

b) generating an initial plurality of business models, wherein a business model describes operations of businesses for solving the business problem, and wherein a business model comprises a plurality of building blocks and an associated operational performance model (See discussion of Applicant's claim 1b) and discussion about building blocks in 15a) above),

c) determining the operational performances of the businesses described by the plurality of business models by simulating the plurality of business models (See discussion of Applicant's claim 1c) above), and

d) generating a next plurality of business models from the simulated plurality of business models by performing an evolutionary method, wherein the evolutionary method uses a fitness dependent on the operational business-model performances and applies genetic operators to the building-blocks of business models (See discussion of Applicant's claim 1d, i, ii, iii) above), and

e) repeating one or more times the c) and d), wherein each repeat of c) simulates that plurality of business models resulting from the previous iteration of d) (See discussion of Applicant's claim 2).

Claim 17. The method of claim 15 wherein each business element comprises a description of at least one of: an input to a business, a value output from a business, a

Art Unit: 3623

transformation employed by a business, and a consideration received by a business for an output value (Keane: Col. 3, lines 25-28 and 39-42, wherein citation “various models are inputted” point to “mere (only) input” and wherein each model is an “element” of the business).

Claim 18. The method of claim 15 further comprising describing a business-model environment, wherein the business-model environment comprises a plurality of computer-simulateable customer models, wherein the customer models patronize the business models to receive values from the business models (See discussion of Applicant's claim 1b) above), and wherein c) further comprises simulating the environment, including simulating the customer models receiving values from the business models (See discussion of Applicant's claim 1c) above).

Claim 19. The method of claim 18 wherein the customer models descriptions of customer behaviors, wherein the behaviors comprise patronizing a business model (Keane: Col. 5, lines 28-30 read with lines 32-40, wherein “consumer's (or customer's)” “purchasing” of goods and services point to “patronizing” and “returning” of products (goods or services)” and his “dissatisfaction” with products and his tendency for “switching” to other competitive products infer customer's (or consumer's) behavior).

Claim 20. The method of claim 19 wherein the customer models descriptions of customer behaviors, wherein the behaviors further comprise choosing a business

model to patronize and being idle (Keane: Col. 5, line 30, "purchasing" goods, service infer his choice (or choosing) and his choosing (or choice) indicates "patronizing" behaviors which is described as idle state (being idle), see Applicant's spec. page 13, lines 24-26).

Claim 21. The method of claim 15 wherein the evolutionary method comprises:

- a) determining business-model fitness in dependence on the operational business model performances (See discussion of Applicant's claim 1e) above),
- b) selecting one or more business models in dependence on their fitness (See discussion of Applicant's claim 1f) above), and
- c) transforming the selected business models into new business models by applying one or more genetic operators, wherein the new business models incorporate elements of the selected business models (See discussion of Applicant's claim 1g) above).

Claim 24. The method of claim 15, wherein each building block describes at least one of: one or more inputs to a business, one or more values output from a business, one or more transformations of inputs into output values by a business, one or more pricing models for a business, one or more performances of a business (See discussion of Applicant's claim 14 and col. 2, line 55).

Claim 28. A method for generating business models for solving a selected business problem the method comprising:

a) describing a plurality of computer-simulateable building blocks, wherein the building blocks comprise descriptions of one or more business elements of the business problem (See discussion of Applicant's claim 15a) above), and wherein business elements comprises descriptions at least one of: an input to a business, a value output from a business, a transformation employed by a business, and a consideration received by a business for an output value (See discussion of Applicant's claim 17)),

b) describing one or more computer-simulateable customer models, wherein the customer models patronize the business model to receive values from the business model (See discussion of Applicant's claim 1b) above),

c) determining the operational performance of a business described by a business model (See discussion of Applicant's claim 15c) above), wherein a business model comprises a plurality of building blocks and an associated operational performance model that describe operation of a business for solving the business problem (See discussion of Applicant's claim 15a) above), and wherein operational performance is determined by simulating (i) the business model, and (ii) the one or more customer models receiving values from the business model (See discussion of Applicant's claim 1c, i and ii above), and

d) generating a final business model of improved performance by performing an optimization method, wherein the optimization method (i) uses a fitness dependent on the operational business-model performances (See discussion of Applicant's claim 15d,

Art Unit: 3623

wherein considering "next model" in 15d as final one), and (ii) substitutes or alters one or more building blocks of the business model (See discussion of Applicant's claims 5 and 6 wherein genetic algorithm operators crossover and mutation are discussed.

Moreover, crossover operator combines by substitution of portions (elements) of one entity (model) with portions of other entity (model) as described in US Patent 5,136,686, col. 11, lines 44-47 and mutation "changes or alters", see US Patent 5,136,686, col. 11, lines 48-49).

Claims 30 and 37. The method of claim 28 wherein the optimization method comprises at least one of: local search heuristics, simulated annealing, reinforcement learning, adaptive computation and machine learning, and an evolutionary optimization method (Keane: Col. 2, lines 55-60, wherein reference system is used as "instructional tool for training" inferring claimed "reinforcement learning").

Claim 34. A method for generating business models for solving a selected business problem, the method comprising:

a) describing a plurality of computer-simulateable building blocks, wherein the building blocks include one or more business elements of the business problem (See discussion of Applicant's claim 15a) above) and further comprise:

(i) one or more computer-simulateable value proposition (VP) building blocks which describe output values provided by businesses (See discussion of Applicant's claim 8)) by comprising information describing at least the one of: the natures of one or

more goods or services provided, qualities of the goods or services, customers for goods and services, relations with other business models, and marketing to customers or business models (See discussion of applicant's claim (See discussion of Applicant's claim 9)),

(ii) one or more computer-simulateable operational approach (OA) building blocks which describe inputs to businesses and transformations of inputs to output values by businesses (See discussion of Applicant's claim 10)) by comprising information describing at least one of: inputs needed for goods or services provided, technology employed to produce the goods or services, and capital and labor needed for production (See discussion of Applicant's claim 11)), and

(iii) one or more computer-simulateable revenue mechanism (RM) building blocks which describe pricing and cost models by which businesses acquire revenues (See discussion of Applicant's claim 12)) by comprising information describing at least one of: a margin or an amount per transaction, a margin or an amount per unit time, a margin or amount per unit volume, transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism, and a membership fee pricing mechanism (See discussion of Applicant's claim 13)),

b) generating an initial plurality of business models, wherein a business model describes operations of businesses for solving the business problem, and wherein a business model comprises a plurality of building blocks and an associated operational performance model (See discussion of Applicant's claim 15b) above),

c) determining the operational performances of the businesses described by the

plurality of business models by simulating the plurality of business models (See discussion of Applicant's claim 15c) above), and

d) generating a next plurality of business models from the simulated plurality of business models by performing an evolutionary method, wherein the evolutionary method uses a fitness dependent on the operational business-model performances and applies genetic operators to the building-blocks of business models (See discussion of Applicant's claim 15d) above), and

e) repeating one or more times c) and d), wherein each repeat of c) simulates that plurality of business models resulting from the previous iteration of d) (See discussion of Applicant's claim 15e) above).

Claim 35. A method for generating business models for solving a selected business problem, the method comprising:

a) describing a plurality of computer-simulateable building blocks, wherein the building blocks include one or more business elements of the business problem (See discussion of Applicant's claim 34a) above) and further comprise:

(i) one or more computer-simulateable value proposition (VP) building blocks which describe output values provided by businesses by comprising information describing at least one of: the natures of one or more goods or services provided, qualities of the goods or services, customers for goods and services, relations with other business models, and marketing to customers or business models (See discussion of Applicant's claim 34i) above),

(ii) one or more computer-simulateable operational approach (OA) building blocks which describe inputs to businesses and transformations of inputs to output values by businesses by comprising information describing at least one of: inputs needed for goods or services provided, technology employed to produce the goods or services, and capital and labor needed for production (See discussion of Applicant's claim 34ii) above), and

(iii) one or more computer-simulateable revenue mechanism (RM) building blocks which describe pricing and cost models by which businesses acquire revenues by comprising information describing at least one of: a margin or an amount per transaction, a margin or an amount per unit time, a margin or amount per unit volume, a transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism, and a membership fee pricing mechanism (See discussion of Applicant's claim 34iii) above),

b) describing a business-model environment, wherein the business-model environment comprises a plurality of computer-simulateable customer models, wherein the customer models patronize the business models to receive values from the business models (See discussion of Applicant's claim 1b) above), generating an initial plurality of business models, wherein a business model describes operations of businesses for solving the business problem, and wherein a business model comprises a plurality of building blocks and an associated operational performance model (See discussion of Applicant's claim 15b) above),

c) determining the operational performances of the businesses described by the plurality of business models by (i) simulating the plurality of business models and

(ii) simulating the environment, including simulating the customer models, and receiving values from the business models (See discussion of Applicant's claim 15c) above), and

d) generating a next plurality of business models from the simulated plurality of business models by performing an evolutionary method, wherein the evolutionary method uses a fitness dependent on the operational business-model performances and applies genetic operators to the building-blocks of business models (See discussion of Applicant's claim 15d) above), and

e) repeating one or more times c) and d), wherein each c) simulates that plurality of business models resulting from the previous iteration of d) (See discussion of Applicant's claim 15e) above).

Claim 36. A method for generating business models for solving a selected business problem the method comprising:

a) describing a plurality of computer- simulateable building blocks, wherein the building blocks include one or more business elements of the business problem (See discussion of Applicant's claim 34a) above) and further comprise:

(i) one or more computer-simulateable value proposition (VP) building blocks which describe output values provided by businesses by comprising information describing at least one of: the natures of one or more goods or services provided,

qualities of the goods or services, customers for goods and services, relations with other business models, and marketing to customers or business models (See discussion of Applicant's claim 34i) above),

(ii) one or more computer-simulateable operational approach (OA) building blocks which describe inputs to businesses and transformations of inputs to output values by businesses by comprising information describing at least one of: inputs needed for goods or services provided, technology employed to produce the goods or services, and capital and labor needed for production (See discussion of Applicant's claim 34ii) above), and

(iii) one or more computer-simulateable revenue mechanism (RM) building blocks which describe pricing and cost models by which businesses acquire revenues by comprising information describing at least one of: a margin or an amount per transaction, a margin or an amount per unit time, a margin or an amount per unit volume, transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism, and a membership fee pricing mechanism (See discussion of Applicant's claim 34iii) above),

b) describing a business-model environment, wherein the business-model environment comprises a plurality of computer-simulateable customer models, wherein the customer models patronize the business models to receive values from the business models (See discussion of Applicant's claim 1b) above),

c) determining the operational performance of a business described by a business model, wherein a business model comprises a plurality of building blocks and

an associated operational performance model that describe operation of a business for solving the business problem, and wherein operational performance is determined (i) by simulating the business model, and (ii) by simulating the environment, including simulating the customer models receiving values from the business models (See discussion of Applicant's claim 1c) above), and

d) generating a final business model of improved performance by performing an optimization method, wherein the optimization method (i) uses a fitness dependent on the operational business-model performances, and (ii) substitutes or alters one or more building blocks of the business model (See discussion of Applicant's claim 28d) above).

Claim 38. Computer executable software instructions stored on a computer readable medium (Keane: Abstract, lines 20-22 read with col. 3, lines 16-17, wherein "program" infers claimed "instructions" and "memory" encompasses storage media or devices, such as HD, CD, Diskette etc. which are considered computer readable and are used to store "programs or instructions", the software instructions for causing a computer to:

a) characterize a plurality of computer-simulateable building blocks, wherein the building blocks comprise one or more business elements of the business problem (See discussion of Applicant's claim 15a) above), and wherein the building blocks further comprise (i) one or more computer- simulateable value proposition (VP) building blocks which describe output values provided by businesses (See discussion of Applicant's claim 15a, i)), (ii) one or more computer-simulateable operational approach (OA)

building blocks which describe inputs to businesses and transformations of inputs to output values by businesses (See discussion of Applicant's claim 15a, iii)), and (iii) one or more computer-simulateable revenue mechanism (RM) building blocks which describe pricing and cost models by which businesses acquire revenues (See discussion of Applicant's 15a, iii)),

b) generate an initial plurality of business models, wherein a business model describes operations of businesses for solving the business problem, and wherein a business model comprises a plurality of building blocks and an associated operational performance model (discussion about building blocks in Applicant's claim 15b) above),

c) determine the operational performances of the businesses described by the plurality of business models by simulating the plurality of business models (See discussion of Applicant's claim 15c) above), and

d) generate a next plurality of business models from the simulated plurality of business models by performing an evolutionary method, wherein the evolutionary method uses a fitness dependent on the operational business-model performances and applies genetic operators to the building-blocks of business models (See discussion of Applicant's claim 15d) above), and

e) repeat one or more times the c) and d), wherein each repeat of c) simulates that plurality of business models resulting from the previous iteration of d) (See discussion of Applicant's claim 15e) above).

Claim 39. Computer executable software instructions stored on a computer readable medium (Keane: Abstract, lines 20-22 read with col. 3, lines 16-17, wherein "program" infers claimed "instructions" and "memory" encompasses storage media or devices, such as HD, CD, Diskette etc. which are considered computer readable and are used to store "programs or instructions"), the software instructions for causing a computer to:

a) characterize a plurality of computer-simulateable building blocks, wherein the building blocks include one or more business elements of the business problem (See discussion of Applicant's claim 35a) above) and further comprise:

(i) one or more computer-simulateable value proposition (VP) building blocks which describe output values provided by businesses by comprising information describing at least one of: the natures of one or more goods or services provided, qualities of the goods or services, customers for goods and services, relations with other business models, and marketing to customers or business models (See discussion of Applicant's claim 35a, i)),

(ii) one or more computer-simulateable operational approach (OA) building blocks which describe inputs to businesses and transformations of inputs to output values by businesses by comprising information describing at least one of: inputs needed for goods or services provided, technology employed to produce the goods or services, and capital and labor needed for production (See discussion of Applicant's claim 35a, ii)), and

(iii) one or more computer-simulateable revenue mechanism (RM) building blocks which describe pricing and cost models by which businesses acquire revenues by comprising information describing at least one of: a margin or an amount per transaction, a margin or an amount per unit time, a margin or amount per unit volume, a transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism, and a membership fee pricing mechanism (See discussion of Applicant's claim 35a, iii)),

b) describing a business-model environment, wherein the business-model environment comprises a plurality of computer-simulateable customer models, wherein the customer models patronize the business models to receive values from the business models, generating an initial plurality of business models, wherein a business model describes operations of businesses for solving the business problem, and wherein a business model comprises a plurality of building blocks and an associated operational performance model (See discussion of Applicant's claim 35b) above),

c) determining the operational performances of the businesses described by the plurality of business models by (i) simulating the plurality of business models and (ii) simulating the environment, including simulating the customer models, and receiving values from the business models (See discussion of Applicant's claim 35c) above), and

d) generating a next plurality of business models from the simulated plurality of business models by performing an evolutionary method, wherein the evolutionary method uses a fitness dependent on the operational business-model performances and

applies genetic operators to the building-blocks of business models (See discussion of Applicant's claim 35d) above), and

e) repeating one or more times c) and d), wherein each c) simulates that plurality of business models resulting from the previous iteration of d) (See discussion of Applicant's claim 35e) above).

Claim 40. Computer executable software instructions stored on a computer readable medium (Keane: Abstract, lines 20-22 read with col. 3, lines 16-17, wherein "program" infers claimed "instructions" and "memory" encompasses storage media or devices, such as HD, CD, Diskette etc. which are considered computer readable and are used to store "programs or instructions" and see discussion of Applicant's claim 36)), the software instructions for causing a computer to:

a) describing a plurality of computer- simulateable building blocks, wherein the building blocks include one or more business elements of the business problem (See discussion of Applicant's claim 36a) above) and further comprise:

(i) one or more computer-simulateable value proposition (VP) building blocks which describe output values provided by businesses by comprising information describing at least one of: the natures of one or more goods or services provided, qualities of the goods or services, customers for goods and services, relations with other business models, and marketing to customers or business models (See discussion of Applicant's claim 36a, i)),

(ii) one or more computer-simulateable operational approach (OA) building blocks which describe inputs to businesses and transformations of inputs to output values by businesses by comprising information describing at least one of: inputs needed for goods or services provided, technology employed to produce the goods or services, and capital and labor needed for production (See discussion of Applicant's claim 36a, ii)), and

(iii) one or more computer-simulateable revenue mechanism (RM) building blocks which describe pricing and cost models by which businesses acquire revenues by comprising information describing at least one of: a margin or an amount per transaction, a margin or an amount per unit time, a margin or an amount per unit volume, transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism, and a membership fee pricing mechanism (See discussion of Applicant's claim 36a, iii)),

b) describing a business-model environment, wherein the business-model environment comprises a plurality of computer-simulateable customer models, wherein the customer models patronize the business models to receive values from the business models (See discussion of Applicant's claim 36b) above),

c) determining the operational performance of a business described by a business model, wherein a business model comprises a plurality of building blocks and an associated operational performance model that describe operation of a business for solving the business problem, and wherein operational performance is determined (i) by simulating the business model, and (ii) by simulating the environment, including

simulating the customer models receiving values from the business models (See discussion of Applicant's claim 36c) above), and

d) generating a final business model of improved performance by performing an optimization method, wherein the optimization method (i) uses a fitness dependent on the operational business-model performances, and (ii) substitutes or alters one or more building blocks of the business model (See discussion of Applicant's claim 36d) above).

Response to Arguments

7. Applicant's arguments filed December 17, 2003 have been fully considered and are responded below.

Applicant argues that:

a) Summers does not teach:

1) determining business model fitness in dependence on the operational business-model performance,

2) selecting one or more business models in dependence of on their fitness.

b) Summers' "genetic algorithm" does not perform functions which Applicant's "evolutionary method" does.

Regarding above, arguments are moot in view of withdrawal of the reference in question.

c) Examiner failed to provide prima facie case of obviousness.


In relation to this, Applicant is requested to see the instant rejection wherein a better elaboration of citations and reasons of combination have been provided.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Irshadullah whose telephone number is 703-308-6683. The examiner can normally be reached on 10:00 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 703-305-9643. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 and for after Final 703-872-9327.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. Irshadullah
February 27, 2004


TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600